

Claims

What is claimed is:

5 ^{Sub} 6. 1. A system for evaluating optical proximity corrected (OPC) designs,
comprising:

an analysis system for performing measurements relating to at least one segment
of a feature;

10 wherein the analysis system is configured to determine a first image corresponding
to the at least one segment of the feature, the analysis system determines a second image
to facilitate analysis of the first image, the analysis system evaluates OPC designs based
upon comparisons of the first and second images.

15 2. The system of claim 1 wherein the analysis system is a CD-SEM system.

3. The system of claim 1 wherein the second image is determined from a
corresponding segment of another feature having a different OPC design.

20 4. The system of claim 1 wherein the second image is determined from a
corresponding segment of another feature having a different mask fabrication process.

5. The system of claim 1 wherein the evaluation of OPC designs is
determined by graphical comparisons of the first and second images.

25 6. The system of claim 1 wherein the second image is determined from a
corresponding segment of an ideal feature.

30 7. The system of claim 6 wherein the evaluation of OPC designs is
determined by graphical comparisons of the first image and the second shape.

E0778

8. The system of claim 1 wherein the evaluation of OPC designs is determined by a regression analysis.

9. The system of claim 1 wherein the comparison of the first and second image is based upon a digital subtraction.

10. The system of claim 1 wherein the comparison of the first and second image provides information relating to corner rounding, end rounding or structure pull-back.

11. The system of claim 1 wherein the at least one segment is determined manually.

12. The system of claim 1 wherein the first and second image are aligned with respect to one another by minimizing a sum of the squares distance between the respective images.

13. The system of claim 1 wherein the image of the feature is determined from a sequence of measurements that are recorded over a distance.

14. A system for optimizing OPC design factors, comprising:
an analysis system for providing measurement data from an OPC corrected structure; and
a processing system operatively coupled to the analysis system;
wherein the processing system is configured to analyze the measurement data from the OPC corrected structure over a predetermined area, and
wherein the processing system provides OPC design performance information based upon the measurement data within the predetermined area.

E0778

15. The system of claim 14, wherein the analysis system is a CD-SEM.

16. The system of claim 14, wherein the processing system is further configured to perform a graphical evaluation upon a set of data generally corresponding to the predetermined area.

17. The system of claim 14, wherein the processing system is further configured to perform a numerical evaluation upon a set of data generally corresponding to the predetermined area.

18. The system of claim 17, wherein the numerical evaluation is determined by regression analysis.

19. A system for evaluating optical proximity corrected (OPC) designs, comprising:

means for performing measurements relating to at least one segment of a feature;
means for determining a first image corresponding to the at least one segment of the feature;

means for determining a second image to facilitate analysis of the first image; and
means for evaluating OPC designs based upon comparisons of the first and second images.

20. A method for evaluating optical proximity corrected (OPC) designs, comprising the steps of:

performing measurements relating to at least one segment of a feature;
determining a first image corresponding to the at least one segment of the feature;
determining a second image to facilitate analysis of the first image; and
evaluating OPC designs based upon comparisons of the first and second images.

E0778

21. The method of claim 20 wherein the measurements relating to the at least one segment of the feature are determined from a sequence of measurements recorded over a distance.

5 22. The method of claim 20 wherein the second image is determined from a second feature having different OPC design factors.

23. The method of claim 20 wherein the evaluation of the first and second image is determined graphically.

10 24. The method of claim 20 wherein the second image is determined from an ideal feature.

15 25. The method of claim 24 wherein the evaluation of the first and second image is determined from comparisons of the first image and the ideal feature.

26. A CD-SEM system for evaluating optical proximity corrected (OPC) designs, comprising:

20 a processing system for performing measurements relating to at least one segment of a feature,

25 wherein the measurements are taken as a sequence of measurements over a distance, the processing system is configured to determine a first image for the at least one segment of the feature based upon the measurements, the processing system determines a second image to facilitate analysis of the first image, the processing system evaluates OPC designs based upon comparisons of the first and second image.